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INTEROFFICE MEMORANDUM

DATE: April 4, 1996

TO: C. A. Bicher, RMRS, Sitewide Actions, Bldg. 080, X9100

FROM: F. C. Chromec, RMRS, Sitewide Actions, Bldg. T893B, X4535 FWC
R. A. Randall, RMRS, Sitewide Actions, Bldg. T893B, X4977 RR

SUBJECT: REQUIRED CHANGES TO THE OPERABLE UNIT 5 HHRA (KH00003NS1A) – FWC-002-96

Action: None required.

In reviewing the risk estimates for the Operable Unit (OU) 5 human health risk assessment, we noticed several items (e.g., exposure factors and scenarios) that needed to be changed to conform with agreements the Department of Energy/Rocky Flats Field Office (DOE/RFFO) (through EG&G, Inc.) had made with the Colorado Department of Public Health and Environment and the Environmental Protection Agency. These changes are summarized below:

1. The intake equation for ingestion of surface soil and sediment in the open-space recreational user exposure to carcinogens was time-weighted to account for exposure to child. The spreadsheets previously had exposure calculations for adults only. Soil and sediment pathways are now consistent with agency agreement and other OU risk assessments.

2. As received, the sediment exposure frequencies (EFs) to all receptors were originally the same as for exposure to surface soils. This is not correct. The EFs for sediments were changed to conform with the exposure frequencies used for the receptor-specific surface water EFs.

3. Ingestion of surface soils was removed from the construction worker pathway in order to be consistent with agency agreement and other OU risk assessments. Inhalation of subsurface soils was added for the construction worker, using the EPA default particulate emission factor (PEF).

4. Inhalation of sediment (stream and seep, but not pond) was added for the ecological researcher and the open-space recreational user, using the EPA default PEF. This is the way OU 6 was done.

5. All carcinogenic slope factors for radionuclides were replaced with the latest values from HEAST. This was done at the request of the regulatory agencies and conforms with other OU risk assessments.

6. The inhalation deposition factor was removed from the intake equation for particulates. This was done at the request of the regulatory agencies and conforms with other OU risk assessments.

7. The exposure factors for the current security worker were adjusted for the assumption that this receptor would remain in an area of concern no more than one-half hour per day, rather than 8 hours per day. This is consistent with what was done in the OU 2 and OU 4 risk assessments.

8. The future onsite office worker was removed as a receptor for exposure to seep water and sediment.

9. Some of the exposure factors for central tendency were the same as for reasonable maximum exposure and were changed to the correct values.

10. In AOC3, exposure to external irradiation from stream sediments was added for both receptors. This is consistent with the OU 6 risk assessment and supports the reality of intermittent streams onsite.

11. Americium-241 and plutonium-239/240 were removed from the inhalation pathway. The inhalation intake concentrations were derived from modeling surface soils. However, because these two radionuclides were not chemicals of concern in either surface or subsurface soils, there was no need to include them in the risk calculations for the inhalation route.

12. Because the modeled air particulate concentration for silver in AOC2 was zero, it was calculated using the PEF and included in the risk calculations.

13. Dermal exposure to seep water was added for the ecological researcher and open-space recreational user.

14. Incorrect cell addresses for sediment exposures were corrected.

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cc:
J. E. Law
A. L. Primrose
RMRS Records